

USPN: 10/698,348
Group Art Unit: 3736
Docket No. 151-P-11706US01

THE CLAIMS

What is claimed is:

1. (currently amended) A method of using an esophageal catheter having a lumen, comprising the steps of:

determining an esophageal location in a patient having an esophagus, comprising the steps of:

passing a distal end of said catheter through an esophagus and a lower esophageal sphincter into a stomach of a patient;

introducing a flow of gas having a constant pressure to a proximate end of said lumen of said esophageal catheter;

measuring a lumen pressure of said gas in said lumen;

pulling back said distal end of said catheter from said patient;

noting an increase in said lumen pressure;

noting a subsequent decrease in said lumen pressure;

identifying an upper boundary of said lower esophageal sphincter based upon said decrease; and

establishing said esophageal location relative to said upper boundary of said lower esophageal sphincter; and

anchoring a capsule to said esophagus with said catheter.

~~utilizing said lumen of said catheter for suction to aid in attaching a monitoring device to said esophagus.~~

2. (original) A method as in claim 1 further comprising the step of determining a baseline for said lumen pressure before said pulling back step and wherein said increase in said lumen pressure is relative to said baseline.

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3. (original) A method as in claim 2 wherein said distal end of said catheter is removed gradually.
4. (original) A method as in claim 3 wherein said increase is measured as said distal end of said catheter enters said lower esophageal sphincter.
5. (original) A method as in claim 4 wherein said decrease is measured as said distal end of said catheter passes an upper boundary of said lower esophageal sphincter.
6. (currently amended) A method as in claim 5 ~~further comprising~~ wherein said anchoring step is accomplished by measuring a predetermined distance from said upper boundary of said lower esophageal sphincter.
7. (currently amended) A method as in claim 6 wherein said esophageal location is a predetermined distance above said upper boundary of said lower esophageal sphincter, ~~and wherein identification occurs said predetermined distance~~
8. (original) A method as in claim 1 wherein said pulling back step is accomplished in a series of incremental steps with pauses in between each of said incremental steps and wherein said measuring step is accomplished during said pauses.
9. (original) A method as in claim 1 wherein said gas comprises air.
10. (currently amended) A method of using a catheter having a lumen, comprising the steps of:
determining an esophageal location in a patient having an esophagus, comprising the steps of:
passing a distal end of said catheter through a first chamber and a restriction into a second chamber of a patient;

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introducing an air flow having a constant pressure to a proximate end of said lumen;

measuring a lumen pressure in said lumen;

determining a baseline for said lumen pressure;

pulling back said distal end of said catheter from said patient;

noting an increase in said lumen pressure;

noting a subsequent decrease in said lumen pressure; and

identifying an upper boundary of said restriction upon said decrease; and

establishing said esophageal location relative to said upper boundary of said lower esophageal sphincter; and

anchoring a capsule to said esophagus with said catheter.

~~utilizing said lumen of said catheter for suction to aid in attaching a monitoring device to said esophagus.~~

11. (original) A method as in claim 10 further comprising the step of determining a baseline for said lumen pressure before said pulling back step and wherein said increase in said lumen pressure is relative to said baseline.
12. (original) A method as in claim 11 wherein said distal end of said catheter is removed gradually.
13. (original) A method as in claim 12 wherein said increase is measured as said distal end of said catheter enters said restriction.
14. (original) A method as in claim 13 wherein said decrease is measured as said distal end of said catheter passes an upper boundary of said restriction.

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15. (currently amended) A method as in claim 14 ~~farther comprising wherein said anchoring step is accomplished by measuring a predetermined distance from said upper boundary of said restriction.~~
16. (currently amended) A method as in claim 15 wherein said esophageal location is a predetermined distance above said upper boundary of said restriction ~~and wherein identification occurs at said predetermined distance.~~
17. (original) A method as in claim 10 wherein said pulling back step is accomplished in a series of incremental steps with pauses in between each of said incremental steps and wherein said measuring step is accomplished during said pauses.
18. (original) A method as in claim 10 wherein said gas comprises air.
19. (currently amended) An apparatus for determining an esophageal location in a patient having an esophagus, a stomach and a lower esophageal sphincter between said esophagus and said stomach, and anchoring a capsule to a wall of said esophagus, comprising:

a catheter, subsequently used for placing a monitoring device at said esophageal location in said patient, said catheter having a lumen, said catheter having a distal end capable of being passed through said esophagus and said lower esophageal sphincter into said stomach;

a source of gas having a constant pressure operatively coupled to a proximate end of said lumen; and

pressure measurement means for measuring a lumen pressure of said gas in said lumen; and

a vacuum source; and

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a structure, operatively coupled with said lumen of said catheter to said vacuum source, anchoring said capsule to said wall of said esophagus using said vacuum source operating in conjunction with said vacuum source;

whereby said distal end of said catheter may be removed from said patient while noting an increase in said lumen pressure relative to said baseline and subsequently noting a decrease in said lumen pressure thereby identifying an upper boundary of said lower esophageal sphincter upon said decrease.

20. (original) An apparatus as in claim 19 further comprising means for determining a baseline for said lumen pressure before said pulling back step.
21. (original) An apparatus as in claim 19 further comprising measuring a predetermined distance from said upper boundary of said lower esophageal sphincter.
22. (currently amended) An apparatus as in claim 19 wherein said esophageal location is a predetermined distance above said upper boundary of said lower esophageal sphincter, ~~and wherein identification occurs said predetermined distance~~
23. (original) An apparatus as in claim 19 wherein said gas comprises air.
24. (currently amended) An apparatus for determining a location in a patient having first chamber, a second chamber and a restriction between said first chamber and said second chamber, and anchoring a capsule to a wall of said esophagus, comprising:

a catheter suitable for placing a monitoring device at said location in said patient, said catheter having a lumen, said catheter having a distal end capable of being passed through said first chamber and said restriction into said second chamber;

a source of gas having a constant pressure operatively coupled to a proximate end of said lumen; and

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pressure measurement means for measuring a lumen pressure of said gas in said lumen; and

a vacuum source; and

a structure, operatively coupled with said lumen of said catheter to said vacuum source, anchoring said capsule to said wall of said esophagus using said vacuum source operating in conjunction with said vacuum source;

whereby said distal end of said catheter may be removed from said patient while noting an increase in said lumen pressure relative to said baseline and subsequently noting a decrease in said lumen pressure thereby identifying an upper boundary of said lower esophageal sphincter upon said decrease.

25. (original) An apparatus as in claim 24 further comprising means for determining a baseline for said lumen pressure before said pulling back step.
26. (original) An apparatus as in claim 24 further comprising measuring a predetermined distance from said upper boundary of said restriction.
27. (currently amended) An apparatus as in claim 24 wherein said restriction is a predetermined distance above said upper boundary of said restriction ~~and wherein identification occurs said predetermined distance.~~
28. (original) An apparatus as in claim 24 wherein said gas comprises air.